Claims

Please amend claim 1 and 8 as follows and please cancel claim 9:

1.   (Currently Amended) A method of programmatically controlling a service of a logical device realized on a first computer ~~on a data communications network via peer-to-peer networking connectivity~~ from a second computer ~~on the data communications network~~, the method comprising:

from the first computer, obtaining at the second computer a service description message [of] related to the service ~~from the first computer~~, the service description message detailing a set of actions that can be invoked on the service via network data messages conveyed to the first computer via peer-to-peer networking connectivity over [the] a data communications network connecting the first and the second computer;

exposing a programming interface to access by software programs running on the second computer, the programming interface having an action-invoking member;

based on the service description message, converting a programmatic invocation of the action-invoking member of the programming interface by a software program running on the second computer into a network data message for invoking an action of the service via peer-to-peer networking connectivity over the data communications network; and

transmitting the network data message to the first computer to thereby invoke the action of the service.

2.   (Original) The method of claim 1 wherein the network data message for invoking the action is a mark-up language text message.

3.   (Original) The method of claim 1 wherein the programming interface is an object integration interface according to an object-oriented programming model.

4.   (Original) The method of claim 3 wherein the programming interface is a run-time dispatching interface.

5.   (Original) The method of claim 1 wherein the action-invoking member accepts an invocation parameter indicating the action of the service that is to be invoked.

6.   (Original) The method of claim 1 wherein the programming interface further has a service state-querying member, the method further comprising:

responsive to programmatic invocation of the service state-querying member by the software programs running on the second computer, obtaining state data of the service via peer-to-peer networking connectivity over the data communications network; and

returning the state data to the invoking software program.

7.   (Original) The method of claim 1 wherein the programming interface further has a service state-querying member that accepts an invocation parameter indicative of a state data variable of the service, the method further comprising:

responsive to programmatic invocation of the service state-querying member by the software programs running on the second computer, obtaining a value of the state data variable of the service via peer-to-peer networking connectivity over the data communications network; and

returning a datum indicative of the value of the state data variable to the invoking software program.

8.   (Currently Amended) In a networking environment providing peer-to-peer connectivity between logical devices on separate computing machines on a data communications network in accordance with a control protocol, the control protocol defining an exchange between a control point and a controlled logical device service in which the controlled logical device service furnishes a service description document to the control point, the service description document specifying a set of actions invocable on the controlled logical device service via peer networking data messages, the control point transmitting the peer networking data messages to the controlled logical device service to cause respective actions to be performed, a user-operated control device comprising:

a rehydrating module;

an application programming interface exposed by the rehydrating module to access from application software running on the user-operated control device, the application programming interface having an invoke action member; and

invoke action member-implementing code of the rehydrating module operating responsive to an invocation of the invoke action member to generate a peer networking data message to cause the

controlled logical device service to perform a respective action of the controlled logical device service;

service description-obtaining code of the rehydrating module operating to obtain the service description document from the controlled logical device service per the control protocol; and

converting code of the rehydrating module operating to construct the peer networking data message based on the obtained service description document.

9.   (Canceled)

10.   (Original) The user-operated control device of claim 8 wherein the application programming interface is an object integration interface conforming to an object-oriented programming model.

11.   (Previously Amended) The user-operated control device of claim 10 wherein the application programming interface is a run-time method invocation dispatching interface.

12.   (Original) The user-operated control device of claim 8 wherein the peer networking data message is a mark-up language text message.

13.   (Original) A computer-readable data carrying medium having software program code carried thereon, the software program code comprising:

a programmatic peer networking device service control module providing programmatic control by application software on a computing device executing the software program code of logical device services of separate computing devices on a data communications network via a peer-to-peer networking connectivity service control protocol;

an application programming interface exposed by the programmatic peer networking device service control module for access by the application software, the application programming interface being a run-time dispatch interface having an invoke service action method member, the invoke service action method member accepting an action identifier, ingoing action arguments, outgoing action arguments, and action return value as parameters upon invocation by the application software; and

invoke service action method member-implementing code of the programmatic peer networking device service control module operating responsive to an invocation of the invoke service action method member on the application programming interface by the application software to exchange data messages with a logical device service of a separate computing device on the data communications network in accordance with the peer-to-peer networking connectivity service control protocol so as to invoke an action of the logical device service as per the parameters of the invoke service action method member and pass outgoing action arguments and action return value from the logical device service back to the application software.

14.   (Original) The computer-readable data carrying medium of claim 13 wherein the software program code further comprises:

service description requesting code of the programmatic peer networking device service control module operating to obtain a service description of the logical device service via an exchange of data messages with the logical device service of the separate computing device on the data communications network in accordance with the peer-to-peer networking connectivity service control protocol, the service description specifying the action identifier, and action arguments of the action of the logical device service.

15.   (Original) The computer-readable data carrying medium of claim 14 wherein the software program code further comprises:

service control data messaging code of the programmatic peer networking device service control module operating based on the service description to construct the data messages for exchange with the logical device service in accordance with the peer-to-peer networking connectivity service control protocol to invoke the action of the logical device service.

16.   (Original) The computer-readable data carrying medium of claim 15 wherein the data messages for exchange with the logical device service are mark-up language text messages.

17.   (Original) A software module carried on a computer-executable software carrying medium, the software module exposing a programming interface for providing programmatic logical device service control via peer networking connectivity, the programming interface comprising:

an invoke action method member having parameters for passing an action identifier, action

arguments and action return value;

      wherein an implementation of the invoke action method member in the software module converts an invocation of the invoke action method member into an exchange of text messages with a logical device via peer networking connectivity based on a service description obtained from the logical device to control a service of the logical device.

      18.   (Original) The software module of claim 17 wherein the programming interface further comprises a state variable querying method member having parameters for passing a state variable identifier and state variable value relating to a logical device state variable.

      19.   (Original) The software module of claim 17 wherein the programming interface further comprises a service type querying method member having parameters for returning a type identifier relating to a service of the logical device.

      20.   (Original) The software module of claim 17 wherein the programming interface further comprises a logical device state call back method member having parameters for passing a reference to a call back interface for reporting change of the logical device's state.

      21.   (Original) The software module of claim 17 wherein the programming interface further comprises status method members having parameters for returning a value indicative of a status of controlling the service of the logical device.

      22.   (Original) The software module of claim 17 wherein the programming interface is an object integration interface conforming to an object-oriented programming model.

      23.   (Original) The software module of claim 17 wherein the programming interface is a run-time method invocation dispatching interface.